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**SOME LARGE BOWLDERS IN THE KAN-  
SAN DRIFT OF SOUTHERN IOWA**

BY  
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## SOME LARGE BOWLERS IN THE KANSAN DRIFT OF SOUTHERN IOWA

Many times the fact has been emphasized that the number of large bowlders on the surface of the Kansan drift is small when compared with the number on the surface of the Iowan drift. In fact, as has been pointed out by Alden and Leighton<sup>1</sup>, there was at one time among some geologists the general impression that if large bowlders of coarse, feldspathic granite were found associated with a drift, that drift was presumably the Iowan and should be so mapped. However, many years ago large bowlders

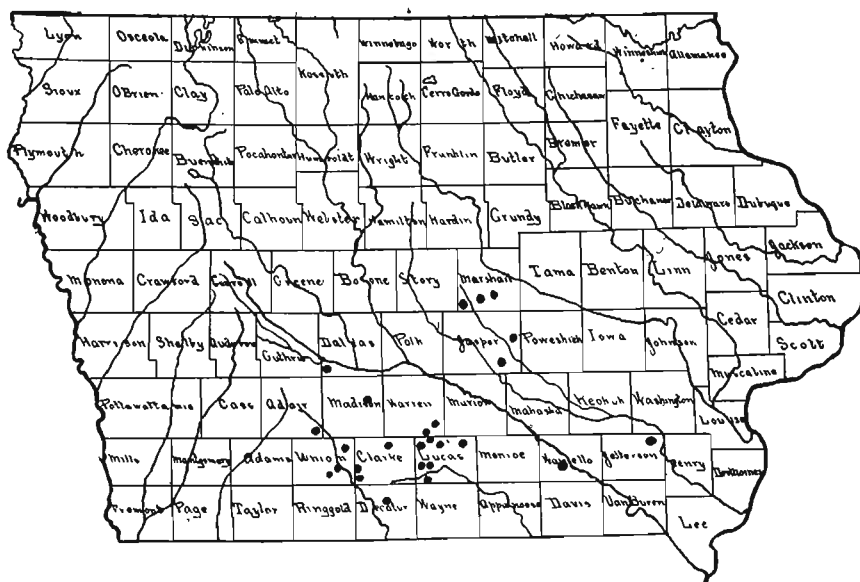


FIG. 40.—Map showing distribution of some large bowlders in Kansan drift in southern Iowa.

<sup>1</sup>Iowa Geological Survey, Vol. XXVI, p. 126.

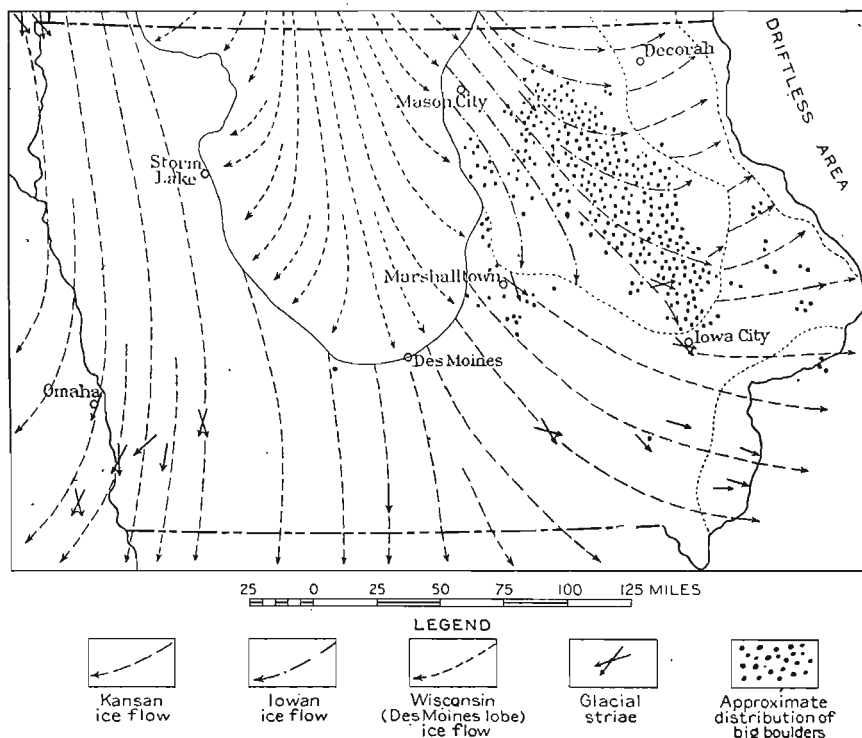


FIG. 41.—Diagram showing the distribution of big granite boulders as related to the distribution of the ice sheets in Iowa.

which are within the area of Kansan drift and many miles from any well recognized area of Iowan drift were described in reports of the Iowa Geological Survey and in other publications.

Recent studies of the Kansan drift of southern Iowa have revealed the presence of more large boulders than had been anticipated, and no doubt if an attempt were made to locate all boulders of large size the number now known could be increased considerably. It seems well at this time to make record of the locations and sizes of large boulders in the Kansan drift area for, one by one, they will be destroyed, some by the farmers in better preparing the farms for cultivation, and some for use in foundations of buildings and for abutments of bridges. A few are being removed to parks and other places to serve as memorials of important events in the history of the state. In figure 40, there are represented only some of the largest boulders, some of which

have been described in former publications; some are described here for the first time. Figure 41, when compared with figure 40, shows graphically in a general way the relative numbers of bowlders in the Iowan and Kansan areas.

In the Kansan drift of southern Iowa the largest boulder known to the writer is in the northwest quarter of section 15, Otter Creek township, Lucas county. It is 25 feet long, 20 feet wide, and is exposed for 16 feet above the surface, figure 42. In this connection it may be of interest to state that the largest boulder known in the Iowan drift area is in the northwest quarter of the southwest quarter of section 22, Riverton township, in Floyd county. Its dimensions are 50 feet by 40 feet by  $11\frac{1}{2}$  feet above ground. A smaller piece which is beside it, and which is apparently a fragment of the larger, measures 17 feet by 7 feet by  $1\frac{1}{2}$  feet.

The writer has seen no large granite bowlders in the southwestern part of the state. It is worthy of mention, however,



FIG. 42.—Large granite boulder in the northwest quarter of section 15, Otter Creek township, Lucas county.

that Mr. F. H. Reed, a farmer living a few miles northeast of Yorktown, furnished information to the effect that in section 15, Morton township, Page county, there used to be a granite boulder on the McCormick farm close to Lone Rock school, which school received its name from the presence of the boulder. It was 20 feet long, 20 feet wide, and 5 feet high. Mr. Reed stated also that a boulder with dimensions of 6 feet by 8 feet by 3 feet

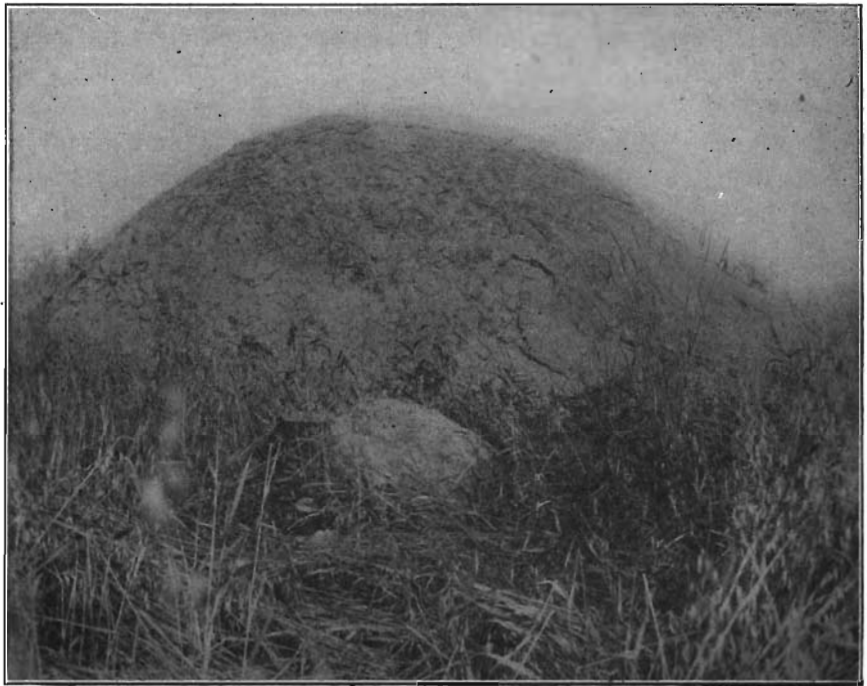


FIG. 43.—Large granite boulder in the southeast quarter of section 13, Liberty township, Lucas county.

had been blasted from the northeast quarter of section 34, Morton township, Page county. In the park at College Springs there is now a boulder of Sioux quartzite with dimensions 6 feet by 4 feet by 3 feet. In this part of the state the loess in many places is sufficiently thick to cover from view such large boulders as may lie on the Kansan drift.




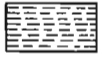




Map of  
The Wapsipinicon Stage in Eastern Iowa

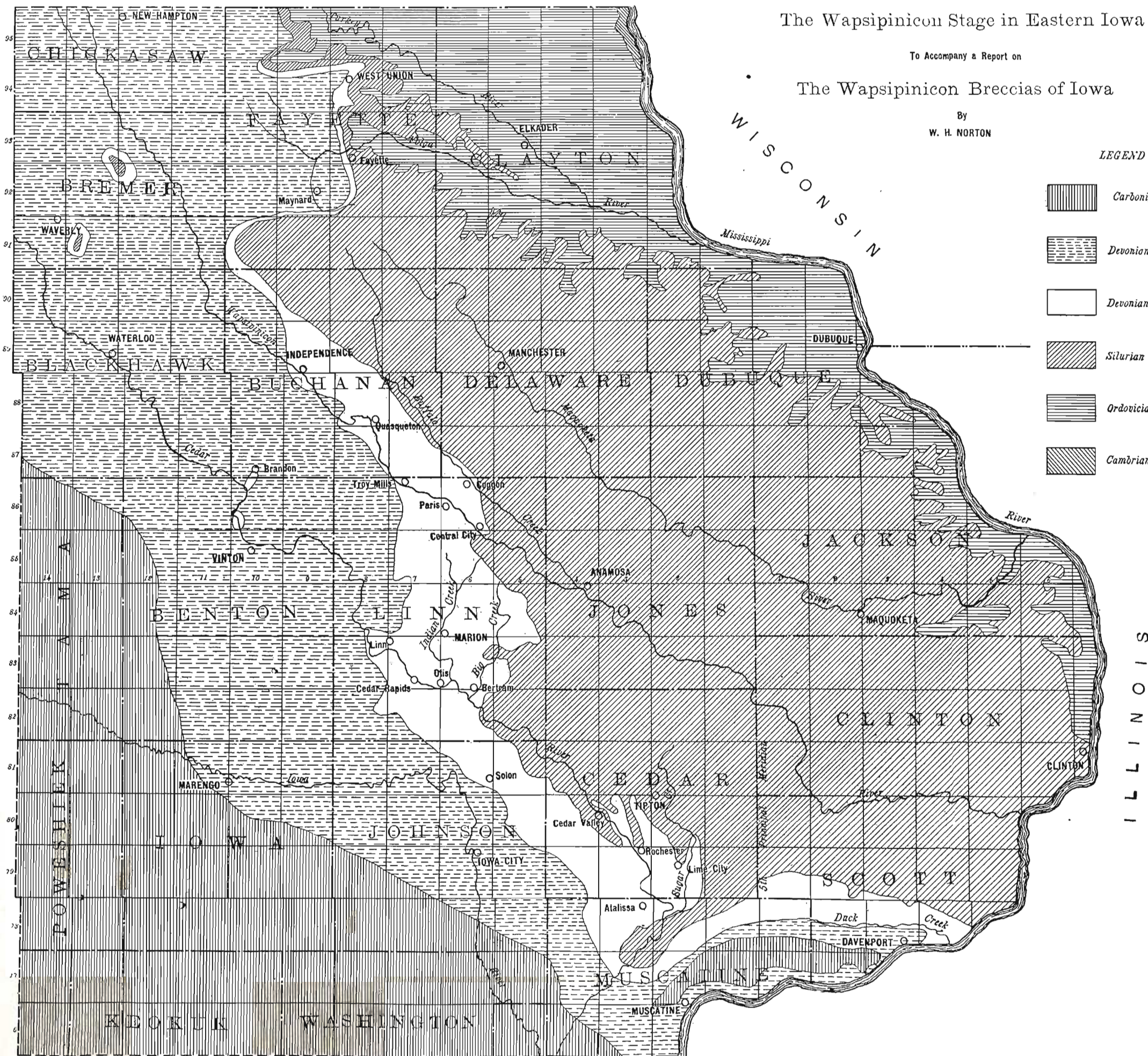
To Accompany a Report on

The Wapsipinicon Breccias of Iowa

By  
W. H. NORTON

LEGEND

-  Carboniferous
-  Devonian Cedar Valley
-  Devonian Wapsipinicon
-  Silurian
-  Ordovician
-  Cambrian



There is given below a brief description of some of the large bowlders in Kansan drift in southern Iowa. Attention is called to the publications in which previous reference has been made to some of these bowlders.

It will be observed that nearly all of the large bowlders are granite; a few are quartzite.



FIG. 44.—Large granite boulder in the northeast quarter of the northwest quarter of section 33, New Hope township, Union county.



COUNTY	LOCATION IN COUNTY	KIND OF ROCK	SIZE	REFERENCE
Henry	Not given.....	Reddish gray granite..	10 ft. across.....	Ia. Geol. Sur. Vol. XII, p. 290, 1902.
Jefferson	¼ mi. east of the N. W. corner of Sec. 15, Walnut twp.....	Porphyritic granite....	17'x12'x7' .....	Ia. Geol. Sur. Vol. XII, p. 427, 1902.
Wapello	S. W. ¼ of S. E. ¼ of Sec. 32, Cen- ter twp. ....	Fine-grained granite...	12'x6'x5' .....	Ia. Geol. Sur. Vol. XII, p. 472, 1902.
Jasper	East of Turner on Rock Island Ry., Sec. 27, Rock Creek twp.....	Coarse granite .....	13'x8'x4' 6".....	
Marshall	South of east-west road in northern part of Sec. 11, Elk Creek twp... S. E. ¼ of S. W. ¼, Sec. 8, Eden twp. ....	Granite .....	15'x4'x3' .....	
	S. E. ¼, Sec. 4, Logan twp.....	Granite .....	19'x17'x4' .....	
	S. W. ¼ Timber Creek twp.....	Granite .....	10'x4'x6' .....	
Lucas	N. W. ¼ of S. W. ¼, Sec. 32, White- breast twp. ....	Granite .....	5'x8'x3' .....	Ia. Geol. Sur. Vol. XXVI, p. 127.
	West side of road between Secs. 31, Benton twp., and 36, Warren twp., N. W. ¼ of Sec. 15, Otter Creek twp. ....	Granite .....	8'x7'x6' .....	
	S. E. ¼ of Sec. 13, Liberty twp....	Granite .....	10'x9'x6' .....	
	N. W. ¼ of Sec. 36, Jackson twp...	Granite .....	25'x20'x16' .....	See figure 42.
	Middle of Sec. 17, Pleasant twp....	Granite .....	12'x9'x7' .....	See figure 43.
	N. W. part of Sec. 5, Liberty twp..	Granite .....	9'x6'x3' .....	
Warren	S. E. ¼ of Sec. 31, Whitebreast twp. ....	Granite .....	23'x15'x10' .....	
		Coarse granite .....	5'x5'x2' .....	
	S. E. ¼ Sec. 16, Whitebreast twp..	Coarse granite .....	Three parts: 12'x12'x4' 6"..... 6'x4'x2' .....	
			6'x1'x1' .....	
			Three parts: 12'x11'x4' .....	
			8'x2'x3' .....	
			5'x3'x3' .....	
Decatur	N. E. ¼ of S. E. ¼ Sec. 17, Cen- ter twp.; now in park at Leon....	Granite .....	6'x6'x4' .....	

Clarke .....	Just south of C. B. & Q. Ry., and close to west boundary, Sec. 19, Troy twp. ....	Granite .....	8'x7'x2' ..... Also three detached slabs.	
	N. W. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ Sec. 30, Doyle twp. ....	Quartzite .....	12'x11'x5' .....	
	S. W. $\frac{1}{4}$ of N. W. $\frac{1}{4}$ Sec. 18, Fremont twp. ....	Reddish granite .....	17'x14' 10"x8' .....	Ia. Geol. Surv. Vol. XXVII, p. 143.
Madison .....	1 mi. north of Patterson.....	Sioux quartzite .....	10'x6'x5' .....	Ia. Geol. Surv. Vol. VII, p. 521, 1896.
Dallas .....	Sec. 18, Union twp.....	Red granite .....	25' long and half as wide .....	Ia. Geol. Surv. Vol. VII, p. 85, 1896.
Union .....	N. E. $\frac{1}{4}$ of N. W. $\frac{1}{4}$ Sec. 33, New Hope twp. ....	Granite .....	12'x9'x4' .....	See figure 44.
	N. W. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ Sec. 29, Jones twp. ....	Granite .....	Three parts: 20'x9'x6' ..... 9'x4'x2' ..... 8'x4'x2' .....	
	Beside C. G. W. R. R. tracks. Few hundred yards north of Shepard, Union twp.....	Quartzite .....	6'x3'x2' ....	
	Another near here.....		6'x4'x2' .....	
Adair .....	N. W. $\frac{1}{4}$ of Sec. 26, Union twp.....	Granite .....	12'x9'x4' 6".....	

